PROGRESS

OF

MEDICAL SCIENCE.

MEDICINE.[1]

UNDER THE CHARGE OF

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Concerning Hemorrhages from the Kidney.—CASPER (*Berl. klin. Woch.*, 1906, xliii, 1271) states that the occurrence of sudden and often profuse hemorrhage from the kidney without any apparent lesion has attracted a great deal of attention the past few years. In many of the cases the usual causes of renal hemorrhage, stone, tuberculosis, tumor, kinking of the ureter, etc., can be definitely excluded, and the absence of any gross lesion has given rise to such terms as essential renal hemorrhage, angioneurotic hemorrhage, and renal hemophilia. Recently, however, a number of authors have opposed the view that bleeding can occur from a healthy kidney. In their own cases they were always able to find some lesion, and, although the lesion was often insignificant, they still look upon it as the cause of the hemorrhage. Casper reports four cases; all were adults in good health, and the occurrence of blood in the urine was the only symptom of disease. There was no albumin and no casts in the urine. Examination of the organ removed at operation revealed in the first two a well-marked, diffuse, chronic parenchymatous nephritis, demonstrating that such lesions may be present for years without albumin, casts, œdema, or circulatory disturbances and displaying as the only symptom repeated and protracted hematuria. In the other two instances most careful macroscopic and microscopic examination showed the removed kidney to be perfectly normal except for such slight and circumscribed changes as Casper thinks might be found in any kidney. These changes consisted in small areas of fresh infiltration and the circumscribed occurrence of fibrous tissue about a few glomeruli and small arteries; in the second case also general œdema of the organ. The œdema, Casper thinks, was the result and not the cause of the hemorrhage. The fresh infiltration could well be the result of handling the kidney during operation, and a little increase in the connective tissue about a glomerulus or small bloodvessel is such a common occurrence that we could not in reason attribute any great importance to its presence. He opposes the use of the term nephritis by Israel, Küster, and Rovsing to express the trivial changes they have found in the cases they report. To constitute a nephritis the changes must be bilateral and must be diffuse. In the examination of a large number of cases, by collecting the urine from two ureters separately, he has never found any evidence to support the view of a unilateral nephritis as described by Israel, Pausson, and Edebohls. Such trivial lesions he believes cannot, at least in his own cases, be held responsible for the hemorrhage. They are found so frequently in kidneys from which no hemorrhage has occurred that it is unjustifiable to settle upon them as a cause without more definite proof. In his cases there was every evidence,from the uniform distribution of the blood in the kidney, that the hemorrhage did not come from any one definite point. He thinks that, as far as our knowledge goes at present, we must accept that bleeding may occur from apparently healthy kidneys without any demonstrable lesion to account for the hemorrhage. He urges early operation in all cases, as without it a positive diagnosis is impossible and the early malignant tumor may be overlooked and, by the time a subsequent bleeding occurs, may have metastatized or become inoperable.

Agglutination in Pulmonary Tuberculosis.—Jessen (*Beit. zur Klin. der Tuber.*, 1906, vi, 209) has made agglutinating tests of the blood serum in a large number of sanatorium patients at Davos. His results fall into three divisions: (1) Patients who are treated by the usual sanatorium methods show, as a rule, a rise in their agglutinating power, and this rise is just as evident and just as high as in cases treated with tuberculin. Evidently the agglutinating power varies under natural conditions and is not, as has been claimed, a direct expression of a reaction to tuberculin injections. (2) Jessen finds that agglutination is of only slight value in prognosis. He divides his cases into three groups: (*a*) Cases that show marked improvement; some of these, originally severe cases, had gradually lost their symptoms and become a great deal better. Nearly all of these display a high agglutinating value, but some who had improved most favorably had a low value. (*b*) Cases clinically considered cured display in most instances a very low value, but a few a very high; and (*c*) cases which had run an unfavorable course showed neither a very low nor a very high value. Apparently, in most instances when improvement takes place the agglutinating power rises. In cases which run unfavorably there is little tendency for such a rise to occur. When improvement produces a cure, the value again tends to sink. Such a classification is accompanied by a great many exceptions, but still Jessen thinks the test is of some prognostic value. If in a given case the agglutinating value is high, the outlook is better than if under the same condition it were low. (3) As a diagnostic measure. In this relation he thinks only high dilutions should be employed. All his tuberculous cases gave values over 1 to 25. While lower values do not exclude tuberculosis, he thinks higher values suggest its presence. Jessen believes its special field in diagnosis is to lend aid in distinguishing between tuberculosis and other diseases when there is some evident pulmonary lesion present.

A Ring Test for Acetone.—LANGE (*Münch. med. Woch.*, 1906, liii, 1764). 15 c.c. of urine is mixed in a reagent glass with from 0.5 to 1 c.c. of acetic acid, and a few drops of a freshly prepared solution of sodium nitroprusside is added. Upon floating a small amount of ammonia upon this mixture an intense violet ring develops at the point of contact, if acetone is present. The test will detect acetone in a 1/400 per cent. solution. This is merely a convenient modification of the Le Noble reaction and has the advantage over Legal's test of not reacting to creatinin. Lange thinks the contact reaction gives a more distinct picture than the mass reaction. It has an advantage over the iodoform reaction in that alcohol and aldehyde do not give it. It is, however, not nearly so sensitive as the latter.

Typhoid Bacillus Carriers in an Insane Asylum.—NIETER and LIEFMANN (*Münch. med. Woch.*, 1906, liii, 1611). In an insane asylum with 900 female inmates, typhoid fever and dysentery have been endemic for many years, although no explosive epidemic attacks have occurred. Attempts to check the occurrence of the disease by isolation, careful attention to the water and food supply, and to the drainage have been of no avail. Being convinced that infection must originate within the institution itself, the stools of all the inmates were examined and in seven instances they were found to contain typhoid bacilli. Two of these patients were ill with dysentery and the two organisms were recovered from the stool. One patient agglutinated typhoid bacilli 1 to 100, and dysentery bacilli (Flexner) 1 to 800; the other 1 to 50 and 1 to 100 respectively. In the insane asylum at Hardte, the discovery and isolation of two typhoid bacilli carriers led to a rapid fall in the number of cases. Nieter and Liefmann hope to obtain the same results by the isolation of their seven patients.

Cultivation of Typhoid Bacilli from the Blood in a Bile-containing Medium.—CONRADI (*Münch. med. Woch.*, 1906, liii, 1654). It is now well known how important routine blood cultures are for the diagnosis of early and doubtful cases of typhoid fever. The organisms may be cultivated in a large percentage of cases and they occur with marked regularity in the first days of the disease and very frequently before the Widal reaction is positive. Conradi now reports a method by which he claims to be able to cultivate typhoid bacilli in practically every instance if the examination is made in the first week. As early as 1901 he called attention to the fact that bile prevents coagulation. It is also an excellent medium for typhoid bacilli to grow upon, probably acting favorably by neutralizing the bactericidal power of the extravascular blood. The medium as he now employs it consists of oxbile with 10 per cent. peptone and 10 per cent. glycerin. In a sterilized tube containing 10 c.c. of this medium from 2 to 3 c.c. of blood obtained from the ear or from a vein is introduced and the mixture incubated for sixteen hours. If typhoid bacilli are present they will have greatly increased in number and identification is readily made by transferring to the usual media.

Theoretical and Practical Consideration of Head's Zones in Visceral Disease.—Kast (*Berl. klin. Woch.*, 1906, xliii, 1033). Head has described certain areas of increased sensitiveness to pain and heat sensation in the skin corresponding definitely to disease of various viscera. These zones he has outlined to correspond with different spinal segments. They do not follow the distribution of the peripheral nerves. Their mode of origin he assumes is, so to speak, a psychical deception. We are devoid of pain sensation conveyed directly from the internal organs, but the sensory nerves from an organ come in close contact in the cord with sensory fibers running from the skin, and our subjective sensations may interpret impulses in the one as pain sensations in the other—referred pains. Kast is of the opinion that in many instances there is hypersensitiveness to touch impressions as well as to pain and thermal sensations. There is generated, however, in the segment a hypersensitiveness so that impulses which under ordinary circumstances are not painful are interpreted as such. This condition Kast calls a local neurasthenia. He points out, too, the importance of a general instability of the nervous centres in the development of the hyperesthetic areas. They are certainly better defined in neurasthenic patients. In a normal individual the continuous discharge of centripetal impulses from the internal organs run to the centres, but whatever changes they produce their effects remain in the subconscious sphere. Under conditions of increased sensitiveness to external and internal stimuli (neurasthenia) these impulses enter the conscious sphere and are frequently transformed into painful sensations. Lenander has shown that one may handle or insult in various ways the abdominal viscera without producing pain sensation; that pain sensation can be evolved only from the parietal peritoneum. His explanation of the hyperalgesic skin areas is the interstitial inflammation about and through the spinal nerves caused by a lymphangitis spreading from the diseased organ. Kast takes exception to such a view, urging that the skin zones do not follow the distribution of spinal nerves and that, if such a perineuritis existed, it would give rise to severe neuralgic pains. He believes, too, that under diseased conditions pain sensations do arise in the internal organs. As interesting as the discovery of Head's zones are, they have not proved of great practical value. In the first place, their occurrence is not constant. They are frequently present in gastric ulcer, particularly in anemic nervous patients and in instances with much pain. But in some of the most evident cases they are absent. The same is true of appendicitis and cholecystitis. In twelve cases of gastric carcinoma, all associated with a great deal of pain, Head's zones were present in only one. On the other hand, the zones occur in such a variety of conditions that no conclusion can be drawn, from their presence, of the nature of the disease. The localization, too, Kast finds practically unreliable. Different diseases in different areas may give the same zones. Still, it must be allowed that they frequently lend a valuable clue when a symptom is present, which may have, as a cause, one of a number of widely different sources, for instance, protracted vomiting, which may be cerebral in origin or come from a gastric ulcer or an appendicitis, etc., or attacks of indefinitely localized pain, which may arise from the heart, intestines, gastric ulcer, cholelithiasis, nephrolithiasis, etc. It is important in our investigations to exclude hyperalgesic areas arising from hysteria or from neuritis or cerebral or spinal lesions and the sensory disturbances which frequently occur with or after infectious diseases and in uremia. These usually have a different distribution. The difficulties in the way of uniform and reliable deductions being drawn from the mapping out of Head's zones are so great as to render the procedure of small practical value with our present means of investigation.

Myeloid Transformation.—HIRSCHFELD (*Berl. klin. Woch.*, 1906, xliii, 1064). Ehrlich, in his classical studies on the blood, drew a sharp line of distinction between the generation of the granular leukocytes and the lymphocytes, the former always arising in the bone-marrow, the latter always in the lymph glands and spleen. Extending these views to disease he drew the same distinguishing line between myelocytic and lymphocytic leukemia, the one type arising in the bone-marrow, the other in the glands and spleen. In the past few years, Hirschfeld, Kurpjuweit and others in man, and Dominici experimentally in animals, have demonstrated, in numerous instances of anemia and infectious diseases, the occurrence of myelocytes, neutrophiles, and nucleated red cells in the spleen and glands and occasionally in the liver. Kurpjuweit and Sternberg claim that myelocytes are regularly present in the spleen in small numbers. Hirschfeld cannot agree with this view, and he has, at his command, an extensive experience. The presence of granular cells he considers a true metaplasia, deriving them from preexisting lymphoid cells or the closely allied large mononuclear cells normally present in the spleen. Similarly certain myeloid tumors in the liver he believes to be autochthonous. In one instance he reports, where they were present in large number, he can see no other explanation of their occurrence, as there were at no time myelocytes in the circulating blood. In three cases of lymphatic leukemia, which he has recently observed and briefly reports in this article, he likewise found extensive myeloid transformation in the spleen and glands. The bone-marrow in three cases contained very few granular cells, while myelocytes and nucleated red cells were abundantly present in the myeloid areas of the spleen and lymph glands. The view that such areas may have been bone-marrow metastases he thinks is refuted by the fact that in two of the cases large numbers of myelocytes were never present in the blood, and in a third the myeloid transformation of the glands was extreme, while only slight in the spleen. It would be difficult to understand why metastases should have shown such a selective action for the glands. In the present state of our knowledge of blood histology, there can be no longer any objection to accepting mixed forms of leukemia. Cases of myeloid leukemia have been reported changing into a lymphoid type. Such evidence as Hirschfeld furnishes leaves no doubt of the occurrence of mixed types of the disease. In myeloid leukemia the spleen and gland tumors do not consist solely of myeloid tissue, but the lymphocytes have a large share in their structure. In the two forms of the disease one type predominates, but not at the expense of the other, which, likewise, hypertrophies. The sharp barriers established by

Ehrlich between the granular cells and the lymphocytes and between myeloid and lymphoid leukemia have been broken down. This does not mean that all distinction is lost and that myeloid and lymphoid leukemia become identical. They probably represent two different diseases which must be histologically and etiologically separated. But a large number of transition forms do occur.

SURGERY.

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An Experimental Study of Suture of Arteries, with a Description of a New Suture.—DORRANCE (*Annals of Surgery*, 1906, xliv, 409) reviews the methods in use, with their advantages and disadvantages. He then describes his method and gives in detail his experiments on nine horses and five dogs. The method consisted in approximating intima to intima with a continuous through-and-through mattress suture modified by going back one-half a stitch every third suture, in order to overcome purse-stringing; over this he placed a continuous overhand suture. Special stress is laid on the following points: (1) Whatever suture is used the principle of placing intima to intima is absolutely essential, and (2) the suture and fringes of the intima should not be exposed to the blood stream.

Suprahyoid Pharyngotomy.—v. HACKER (*Zentralbl. f. Chir.*, Nov. 10, 1906) says that the technique of oblique or transverse pharyngotomy has been developed from observations made upon suicidal wounds occurring in this region, which, in general, lie chiefly below the hyoid bone. The view obtained of the entrance into the larynx and pharynx, through a suicidal wound, and the healing which followed, led to the development of subhyoid pharyngotomy as an operation. A similar suicidal wound above the hyoid bone suggested the performance of suprahyoid pharyngotomy. Hocher has recently, again, recommended very highly the subhyoid operation. He avoids tracheotomy when possible, performing it secondarily only when a laryngeal nerve has been wounded. When tracheotomy is not done he places the body in an oblique position. He does the operation under local anesthesia with applications of cocaine solution to the mucous membrane. v. Hacker found this method very satisfactory in two cases in which he did thyrotomy, or splitting of the thyroid cartilage, for the removal of cancers of the larynx.